UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Michael ASMUSSEN et al.	Examiner: n/a
Serial No.:	09/921,057	Art Unit: 2611
Filed:	August 3, 2001	
Title:	VIDEO AND DIGITAL MULTIMEDIA AGGREGATOR CONTENT SUGGESTION ENGINE	

Box:
Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to examination on the merits, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Amend the specification as follows:

Page 8, line 11, after ";" insert "and";

Page 8, line 14, delete ";" and insert ".";

Page 8 delete lines 15 and 16;

Page 15, line 28, delete "(see Figures 11a-11c)";

Page 15, line 31, delete "618";

Page 18, line 6, delete "618 (See Figures 11a-11c)"

Page 18, line 15, delete "(see Figures 11a-11b)";

Page 19, line 29, delete "618";

REMARKS

Claims 1-33 are pending. By this preliminary amendment the specification is

amended to delete reference to Figures 11a-11c and 12a-12b.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

The commissioner is hereby authorized to charge or credit any deficiencies in connection with this preliminary amendment to deposit account No. 04-1425.

Respectfully submitted,

Date: December 21, 2001

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Page 8, line 11 has been amended as follows:
database of suggestion terms; and

Page 8, line 14 has been amended as follows:
from the suggestion database[;].

Page 8, line 15 has been amended as follows:
[Figures 11a-11c show a search request form; and]

Page 8, line 16 has been amended as follows:
[Figures 12a-12b show a search results form.]

Page 15, line 28 has been amended as follows:
form [(see Figures 11a-11c)] received from the user terminal 202, and performs a search

Page 15, line 31 has been amended as follows:
criteria are appended to the search request form [618] forming an augmented search request

Page 18, line 6 has been amended as follows:
the search request criteria contained in the search request form [618 (See Figures 11a-11c)].

Page 18, line 15 has been amended as follows:
vector range may be appended to a search request form [(see Figures 11a-11b)] to create an

Page 19, line 29 has been amended as follows:
search request form [618]. Content is suggested by creating a list of suggested search criteria

Figure 6b is a diagram of components of a suggestion keyword indexer used with the search suggestion engine of Figure 6a;

Figure 6c is a diagram of components of a suggestion database processor used with the search suggestion engine of Figure 6a;

Figure 7 is a schematic of subsystems of a database administrator as part of the content search, packaging, and delivery system;

Figure 8 is a schematic of subsystems of a system administrator and components with which the system administrator interacts as part of the content search, packaging, and delivery system;

Figure 9 shows a flowchart describing a process of building and maintaining a database of suggestion terms; and

Figure 10 shows a flowchart describing a process of using current search request criteria along with user profile and history data for retrieving suggested search parameters from the suggestion database.

DETAILED DESCRIPTION

Figure 1 is a block diagram of a content search, packaging, and delivery system 200. The content to be packaged and delivered by the system 200 includes video, television, radio, audio, multimedia, computer software and electronic books. Components of the system 200 include an aggregator 201 and a user terminal 202, which are connected using a wide area distribution system 203. Other components are remote content servers 204 that exchange data with the aggregator 201 using a wide area network/Internet 205 connection. The user terminal 202 may incorporate a video display system 207, an audio playout system 208, an audio/video recording system 209, user input devices 214, an electronic book reader 230, and a connection to a home network 229 to interact with other devices in the user's home environment. Alternatively, one or more or all of the video display system 207, the audio playout system 208, the audio/video recording system 209, and the electronic book reader 230 may be separate components that are coupled to the user terminal 202.

The system 200 allows a user to enter search parameters, such as keywords and category headings, and have the aggregator 201 use these parameters to locate, package, and

be able to suggest content to the user that is related in various ways, such as by category or theme. The content search suggestion engine 304 is shown in detail in Figure 6a. For example, if a user wishes to see programs about *Titanic*, the content search suggestion engine 304 may, in addition to suggesting programs about *Titanic*, suggest or inform the user of programs and other content such as electronic books about ships other than *Titanic*. Likewise, if the search criteria include Johnny Weismuller, an actor who starred in Tarzan movies, the content search suggestion engine 304 might suggest programs and other content about Tarzan featuring someone other than Johnny Weismuller. Furthermore, the content search suggestion engine 304 may suggest programs for viewing based on past search criteria entered by the user as well as information on content the user has actually downloaded. For example, if the search criteria includes Johnny Weismuller and the user has searched and/or downloaded numerous sports-related programming in the past, the content search suggestion engine 304 may suggest programming and other content including swimming competitions and sports history and biography programming as well as Tarzan movies and other content directly related to Johnny Weismuller such as the Jungle Patrol television series. If the user searched for and received Tarzan movies, the programming search suggestion engine 304 might suggest electronic books by Edgar Rice Burroughs. Such electronic books could then be downloaded to the user terminal 202 using the wide area network/Intranet 205 bypassing the aggregator 201, or could be compiled at the aggregator 201 for delivery to the user terminal 202. Electronic book delivery systems are described in U.S. Patent 5,986,690, entitled "Electronic Book Selection and Delivery System," to Hendricks, and in co-pending patent application serial numbers 09/289,957, entitled "Electronic Book Alternative Delivery Systems," and 09/289,956, entitled "Electronic Book Alternative Delivery Methods," both of which are hereby incorporated by reference.

During submission of a content search request, the user may have the option of disabling the return of suggested content results if desired. In order to retrieve results for suggested programming, the content search suggestion engine 304 analyzes a search request form received from the user terminal 202, and performs a search within a suggestion database 308 for additional search criteria to be used to find suggested content related in some way to the original search request results. These suggested search criteria are appended to the search request form forming an augmented search request

The index matrix record builder 329 may include a vector assignment module 341 that assigns a word item vector value for a word item. The word item vector value may be a measure of similarity between a word item and a related term.

Figure 6c shows the suggestion database processor 307 in more detail. A vector determination module 343 assigns a search term suggestion vector range to one or more of the search request criteria contained in the search request form

A vector value comparator 345 compares the search term suggestion vector range and the word item vector value to determine if a word item vector value falls within the suggestion vector range. Word items that fall within the suggestion vector range may be used to search the suggestion database.

A database administrator 502, shown in detail in Figure 7, as part of the system administrator 500 (see Figure 8) maintains the aggregator local database 501 and interfaces with the various components of the aggregator 201 that retrieve information from and store information to the aggregator local database 501. Word items that fall within the suggestion vector range may be appended to a search request form to create an augmented search request form that may be used by the search request processor 303 to return suggested content results. A group of individual databases maintained within the database administrator 502 constitutes the aggregator local database 501. An administrative database server 509 maintains an aggregator administrative database 510, which stores and processes information including, but not limited to, authorized system administrators, passwords, and administrator usage rights. The administrative database server 509 also governs replication of all databases to aggregator local storage 254 and backup of aggregator local storage 254 to the aggregator archives 255. A user database server 511 maintains an aggregator user database 512, which stores and processes information including, but not limited to, user account data, user profile information, user subscription services, user access rights, and past user search and download data (if authorized by the user).

A content provider database server 513 maintains a content provider database 514, which stores and processes information including, but not limited to, a roster of registered content providers and their administrative data, remote provider administrators and their passwords and access rights, and terms of agreements between providers and the operator of the particular aggregator 201. A content database server 515 maintains an aggregator local

content database 516, an aggregator remote content database 517, and an aggregator scheduled content database 518. The aggregator local content database 516 stores and processes information including, but not limited to, the catalog of all content stored in the aggregator local storage 254 and all metadata associated with that content. The aggregator remote content database 517 stores and processes information including, but not limited to, the catalog of all content stored in each remote database 261 and all metadata associated with that content. The aggregator scheduled content database 518 stores and processes information including, but not limited to, scheduled broadcast programming content and scheduled streaming program content available to users, available live programming, recurring scheduled programming, and program schedule metadata information.

The system user can initiate content search requests by entering several different types of search criteria using several different options of input device or method. Search criteria can be entered using keywords that relate to certain aspects of programming content including, but not limited to, subject, author, title, cast members or performers, director, and/or content description. A search can be based on program type or format including, but not limited to, movies, television series, documentaries, sports programs, talk radio, music radio, and electronic books. The user may input search criteria based on subject categories including, but not limited to, action, drama, history, educational, juvenile, adult, current events, nature, live events, and music categories such as classical, jazz, rock, consumer affairs, political content, and geographically specific content. Search criteria can also be entered based on time of day, channel, and/or content provider. The user may also input free form questions using plain speech patterns. In any case, the different search criteria can be used separately or in conjunction with one another to refine a content search. An example might be the entry of "*Titanic*" as a keyword, "Documentary" for program type, and the free form question "What company built *Titanic*?".

The content search suggestion engine 304 shown in Figures 6a-6c builds and maintains the suggestion database 308 and analyzes content search requests along with the users' histories and profiles to create lists of suggested search terms to be appended to the search request form . Content is suggested by creating a list of suggested search criteria based on the user's profile, history, and current search request and submitting this suggested search criteria in parallel with the user defined search criteria to the search engine server 350.